Missile Defense Agency

Fiscal Year (FY) 2005
Budget Estimates

Press Release

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MISSILE DEFENSE AGENCY
FISCAL YEAR (FY) 2005 BUDGET ESTIMATES OVERVIEW

I. INTRODUCTION

In December 2002, the President directed the Department of Defense (DoD) to begin fielding an initial set of missile defense capabilities in 2004. We will realize that goal this year, and for the first time we will have a capability to defeat a ballistic missile attack threatening the United States. It also will be a major step toward attaining the greater goal of defending the United States, and our allies, friends, and deployed forces from ballistic missiles of all ranges in all phases of flight.

Our program of work and this budget submission achieve four key objectives, which are critical to satisfying the President's direction to begin to field an initial capability as well as his direction to employ an evolutionary approach to missile defense development and deployment to improve our defenses over time. These objectives are:

- Complete, verify and test the Initial Defensive Capability,
- Put the Ballistic Missile Defense System on alert,
- Perform and sustain concurrent testing and operations, and
- Continue to enhance the Ballistic Missile Defense System (BMDS) capability over time.

The overview describes how we are achieving these objectives. It also describes our budget structure, our management and oversight processes, and our program plans and goals. It is intended to summarize and accompany our budget. It also responds, in Section IV on Program Plans and Goals, to the new requirements levied by 10 USC, Chapter 9, Section 223a.

II. BUDGET HIGHLIGHTS

We are confident of accomplishing these objectives because of the progress we continue to make in the Ballistic Missile Defense Program. We are making significant strides toward Initial Defensive Operations, or IDO as we refer to it. Initial Defensive Operations is the culmination of a combined effort among the Missile Defense Agency (MDA), the Combatant Commanders (COCOMs), the Joint Staff, and the Services to begin conducting operations to defend the United States against a small ballistic missile attack. IDO is the result of placing the Initial Defensive Capability (IDC) on alert. It is different from traditional weapon system deployments, and it is unprecedented in scope. We are fielding basic capability in the initial system and we intend to conduct concurrent testing and operations. Our confidence in realizing an initial capability is underpinned by our intense flight and ground test programs, and will be supported by a military utility assessment to be conducted by the Joint Staff and COCOMs, and an assessment by the Director for Operational Testing and Evaluation.

Development The foundation of our program of work is our aggressive research and development effort, which is guided by capability-based planning and spiral development. Capabilities-based planning allows us to develop capabilities and objectives based on technology feasibility and disciplined engineering analyses and the capability of the threat. Spiral

development enables the execution of an iterative process for developing the BMDS by refining program objectives as technology becomes available through experimentation and risk management with continuous feedback based on regular interaction among military operators, the test community and MDA. This leads to an evolutionary approach to missile defense deployment in which there is no final or fixed missile defense architecture but we continue to improve the effectiveness of defensive capabilities over time. To accomplish our goal of an integrated, layered BMDS capable of engaging enemy ballistic missiles of all ranges during the boost, midcourse, and terminal phases of flight, our development program is focused on:

- Fielding an initial capability in accordance with the President's direction;
- Adding interceptors and networked, forward-deployed ground-, sea-, and space-based sensors to make the interceptors more effective in 2006-07; and
- Adding layers of increasingly capable weapons and sensors, made possible by insertion of emerging technologies.

Our aggressive research and development (R&D) program has delivered important dividends. A critical example is the recovery we made this year from accidents at one of our Ground Based Interceptor (GBI) booster subcontractors. Several years ago, we made a decision to pursue a dual booster strategy for the GBI in order to reduce risk and maintain the aggressive, competitive timelines required to deploy that component of the BMDS. Because the tragic accidents would have delayed our initial capability if we had not pursued the dual booster strategy, our approach has allowed us to maintain our timeline to provide an initial capability to protect the United States. It has also allowed us to handle delays in developing our Theater High Altitude Area Defense (THAAD) capability as well.

We are continuing to use this parallel-path approach in other areas of our R&D program. We recently awarded a multiyear Kinetic Energy Interceptor (KEI) contract, which will develop a capability to intercept ballistic missiles in the boost phase, when they are undergoing powered flight. Our KEI program has a low risk schedule, relaying on mature technology and when successful, will make a significant contribution to overall BMDS performance. The Airborne Laser (ABL) program continues to advance its revolutionary directed energy approach to boost phase defense. The ABL aircraft completed airworthiness and air refueling milestones and is now being readied at Edwards Air Force Base (EAFB) for integration of the beam control and fire control segment. Before the aircraft arrived at EAFB, the program demonstrated the capability to track an intercontinental ballistic missile (ICBM) throughout the boost phase. Currently, the modules for the laser segment are being integrated in the System Integration Laboratory at EAFB. The program remains structured to demonstrate technical achievements by incrementally stepping through a series of knowledge points, including ground tests of a flight-worthy laser segment – so called "first light" – and beam control/fire control segment, flight tests of these same systems, and a lethality demonstration. Our Space Tracking and Surveillance System (STSS) program continues to advance ahead of schedule. STSS is essential to eventually achieving a global BMDS. When fully deployed, it provides a worldwide constellation of infrared surveillance and tracking satellites capable of detecting and tracking ballistic missiles from launch to impact.

Integration We have transitioned the program from a collection of individually defined elements to a program focused on a single, integrated system whose performance is measured as

a whole. In this context, elements and components are measured by their contribution to overall system performance.

The Missile Defense National Team (MDNT) has been a key enabler of this transition. The MDNT performs the following functions for the BMD program:

- Establishes strategic technical goals in the Technical Objectives and Goals document;
- Analyzes adversary capabilities and publishes the Adversary Capabilities Document;
- Defines the BMDS in increments of two-year blocks (Block Data Packages);
- Designs the system via the System Capability Specification (SCS) and Interface Control Specifications (ICS)
- Plans the integration and implementation of the system via the System Integration Strategy and Plan and the Planning and Allocation Matrix;
- Verifies and assesses system performance, to include test objectives and target requirements, via the Capability Verification and Assessment Plan (CVAP) and the Capability Verification and Assessment Report (CVAR); and
- Controls this process with configuration management, risk management, systems analysis, and modeling and simulation.

Our investment in this unique collaboration of personnel from government, Federally Funded Research & Development Centers (FFRDCs), University Affiliated Research Centers (UARCs) and industry is beginning to pay off. For instance, the National Team developed the concept of Engagement Sequence Groups (ESGs), which has become (as discussed later in Section V on BMD Program Goals) an important means for measuring the contribution of our RDT&E program. ESGs are an effective means of describing the complex BMDS; facilitate definition of specifications for both the BMDS and its constituent elements; and serve to relate the multiple ways of engaging a target. Our goal-setting procedures have also matured.

Testing Our BMDS test philosophy recognizes the need for an integrated, phased test program that covers all facets of testing using flight tests, ground tests, wargames and models and simulations. Employing this philosophy, we continue to have success in our test program, demonstrated most recently with Aegis BMD conducting a successful Flight Mission-6 test (FM-6) on December 11th, 2003. In FM-6, an up-range Aegis BMD equipped destroyer (USS RUSSELL), as well as other sensors, detected and tracked a short-range ballistic missile. Data from these sensors was transmitted to the USS LAKE ERIE, which detected, tracked and engaged the ballistic missile target with a developmental Standard Missile 3 (SM-3). The kinetic warhead (KW) on the SM-3 used hit-to-kill technology to achieve a lethal intercept and destroy the target. Simultaneous to the engagement, both USS RUSSELL and USS LAKE ERIE transmitted tracking data to other parts of the system, including the Ground Based Midcourse Firing Unit and BMDS Battle Management nodes.

To summarize our test program, during Fiscal Years 2002 and 2003, we achieved three of four long-range, ground-based intercepts; three of four Aegis BMD ship-based exoatmospheric intercepts; four of five PATRIOT Advanced Capability-3 (PAC-3) short-range, ground-based intercepts; and the first flight of the Airborne Laser (ABL) aircraft. We learn a great deal with each test, even when an intercept is not achieved. In total, in Fiscal Years 2002 and 2003, we conducted 45 flight tests, of which 14 were planned intercept tests, and 27 ground tests. In Fiscal

Years 2004 and 2005, we plan to conduct an additional 53 flight tests, of which 24 are planned intercept tests, and 48 ground tests. Additionally, free from the constraints of the Anti-Ballistic Missile Treaty, we have expanded testing programs to include previously prohibited activities such as the testing of sea-based radars (Aegis SPY-1), THAAD radar, and airborne sensors (Airborne Laser Infrared Search and Track sensor) against long-range targets. Our Missile Defense Integration Exercises (MDIEs) are also being enhanced to accommodate the testing of integrated missile defense systems. Ballistic missile defense also achieved real-world success during the conflict in Iraq. The PATRIOT system, either with PATRIOT Advanced Capability-3 interceptor or the Guidance Enhanced Missile interceptor, successfully intercepted nine of nine ballistic missiles during the conflict. This budget will allow us to continue this testing progress.

President's Direction In the fall of 2004, we anticipate the United States will have on alert several interceptors at Ft. Greely, Alaska, the Cobra Dane radar at Eareckson Air Station on Shemya Island in Alaska, an Upgraded Early Warning Radar (UEWR) at Beale Air Force Base in California and an Aegis Surveillance and Tracking ship. Throughout Fiscal Year 2005, we will increase the capability of the BMDS by adding interceptors at Ft. Greely and at Vandenberg Air Force Base in California; adding a UEWR at Fylingdales Air Base in the United Kingdom; adding sea-based missiles and upgraded radars on Aegis cruisers and destroyers; and adding the command and control capability to maximize BMDS performance. The Army will also continue adding PATRIOT missiles to our capability.

This IDC is the first increment of an evolutionary approach to missile defense development and deployment; it is not the final or fixed missile defense architecture. This budget provides funding to go beyond the initial capability – to continue fielding ballistic missile defenses. Fiscal Year 2005 includes large investments in the next increment of missile defense capability to ensure we can improve the system in the following years by expanding the breadth and depth of our defense. We will enhance the operational capability in 2006 and later by adding forward-deployed, networked sensors; adding interceptors at sea and on land; and potentially, deploying these land-based interceptors at new sites.

Operations The new Unified Command Plan, UCP-02, has assigned the role of global integrated planning for missile defense to the U.S. Strategic Command (USSTRATCOM). Because the BMDS will operate across several areas of responsibility (AORs), the DoD recognized the necessity of integrating missile defense operational planning. Operational planning, however, is a cooperative endeavor and USSTRATCOM is working closely with the Combatant Commanders (COCOMS), the Joint Staff, and MDA to develop a Concept of Operations for the BMDS. Consequently, our support to and interaction with USSTRATCOM is growing. We have also expanded the role of the COCOMs in our test planning, war games and integration exercises. For instance, USSTRATCOM and United States Northern Command (USNORTHCOM) are fully involved in the planning of our MDIEs, four of which will occur over the next two years, and our Integrated Missile Defense war games, which simulate system-wide engagements. We have also reached an agreement with the Services, which is described in the next section, on funding for Ballistic Missile Defense System Operations and Support.

International Participation To provide protection to our allies and friends, as well as to the United States, international participation has become a major thrust of our program. Consistent with Presidential guidance, we will strive to structure our programs to promote cooperation, and

we will seek to take advantage of allies' capabilities to enhance the BMDS. We have had much activity in this regard, just in the past year. Most notably, Japan has announced that it will deploy a ballistic missile defense capability as quickly as possible. Foreign Military Sales (FMS) cases are in development for Japan to procure the Aegis BMD and PATRIOT PAC-3 systems. These systems will become operational in Japan in 2007. We began an intense analysis effort aimed at exploring additional ways of improving BMD for Japan and the U.S. based in part on the U.S./Japan Cooperative Research Program initiated in 1999. Australia has also announced its interest in participating in the BMDS efforts. The U.S. signed a Memorandum of Understanding on Ballistic Missile Defense with the United Kingdom, and an Annex on upgrading the Fylingdales Early Warning Radar. And, in addition, NATO initiated a feasibility study for protection of territories against long-range ballistic missile attacks. In the coming year, discussions on missile defense cooperation with NATO as well as countries such as Spain, The Netherlands, Germany and Israel will continue, while we seek to expand cooperative opportunities to others, including new friends like Russia.

We are extremely interested in cooperative efforts with the Russian Federation, but we have been concerned about the Russian-American Observation Satellite (RAMOS) program. The current program office estimate of additional funding required for RAMOS is $550 million to program completion starting in FY (Fiscal Year) 2005. Given the uncertainty associated with the future of the RAMOS program, this funding could be used for more beneficial missile defense cooperation projects with Russia. We intend, therefore, to terminate the RAMOS program with this budget. We will continue, however, to pursue a Memorandum of Understanding (MOU) as an overarching agreement to govern all defense technical cooperation with Russia, and we are exploring alternative, more beneficial missile defense cooperative projects at this time.

A specific initiative we are undertaking beginning with this budget is international cooperation in the KEI program. Our objective is to encourage substantial participation by friends and allies in the development of alternate BMDS interceptor capabilities element such as the booster, kill vehicle, launcher, or command, control battle management and communication (C2BMC) system. This approach reduces risk, adds options for component evolution, and most importantly, fosters collaboration with our friends and allies leading to an indigenous overseas production capability. In fiscal year 2005 we intend to award contracts for international industry development projects that produce viable alternate components for potential insertion during Block 2012 (the period beginning 1 January 2012 through 31 December 2013) and succeeding Blocks.

Significant Changes From FY04 Budget Submission We have made changes in this year's budget as compared to the FY04 submission. The following is a summary of the significant changes.

- We added funding for the next increment of BMD capability. The FY 05 funding for these efforts is approximately $677M, and approximately $2.6B from FY 05-07. This includes funding for additional GBIs at Fort Greely, AK, the upgrade of the Thule early warning radar, long lead activity for GBIs at a potential third site and one additional midcourse radar, three additional Forward Deployable Radars, additional SM-3 missiles, and initial THAAD fielding.

- We also realigned funding among blocks in several programs. In the ABL program, we realigned funding from Block 2006 and Block 2008 to Block 2004, and added funding to FY 09. In FY 05, we added $333M to Block 2004.
- We moved all BMDS Interceptor funding out of Block 2008 into Block 2010 and Block 2012. Additionally, most of the funding for the space component of BMDS Interceptor program was moved into the land and sea component (KEI). The latter was driven by the desire to focus on developing a boost / ascent phase capability as soon as possible.
- We moved funding with the Aegis BMD program from Block 2008 and 2010 into nearer term blocks (2004 and 2006) to focus efforts in fielding an initial capability and on lowering the risk associated with completing the SM-3 Block IA design and entering rate procurement. A significant amount of this funding ensures the delivery of the initial BMD-capable Aegis Weapon System. The FY 05 amount added to Block 2004 and Block 2006 is approximately $115M.
- In addition to the funds added for the next fielding increment, we added funding to GMD in FY 08-09 to sustain a minimum production and testing capacity. The total funding addition over those two years is approximately $700M.
- Finally, we realigned some of our Mission Area Investment efforts into Blocks. Specifically, nearly all the C2BMC, and Test and Targets activity has been realigned from Mission Area Investments into the Blocks. There has also been some realigning of activity among the Blocks in these areas. The total movement out of Test and Targets and C2BMC in FY 05 is approximately $150M.

III. INITIAL BALLISTIC MISSILE DEFENSE CAPABILITY

Our planning date for an IDO Alert Declaration is fall 2004, but we will recommend to the Secretary of Defense that he place the Ballistic Missile Defense System on alert as soon as there is a capability to defend against a single intercontinental ballistic missile. Throughout FY 2005, we will continue placing components of our initial capability on alert, while the National Team will continue to evaluate risk, assess performance and manage configuration of the system. When completed by December 2005, this initial capability will consist of up to 20 GBIs distributed at Ft. Greely, Alaska and Vandenberg Air Force Base in California; the upgraded Cobra Dane radar at Eareckson Air Station on Shemya Island in the Aleutians; upgraded early warning radars at Fylingdales in the United Kingdom and Beale Air Force Base, California; three Aegis Ballistic Missile Defense Engagement Cruisers with up to 10 SM-3 missiles; 10 Aegis BMD Long Range Surveillance and Tracking (LRS&T) Destroyers, with an additional 5 destroyers being equipped in 2006; and a Command & Control/Battle Management/Communications function enabling the system to engage threats.

One of our key objectives is the concurrent testing and operation of the BMDS. Before being directed to deploy an operational system, we were focused on the development of a BMDS Test Bed, in which we could conduct realistic and comprehensive system integration and testing. The need for such testing has not diminished. In this environment, it is prudent and cost effective to combine all relevant development and operational test objectives. The National Team ensures every ground and flight test includes operational test objectives that provide data for an operational assessment. To facilitate this effort, we have formed a Responsible Test Organization (RTO) with an embedded BMDS Combined Test Force (CTF). This brings developmental and operational testers from both contractors and the government together to plan

and execute all testing in accordance with combined developmental and operational objectives to the maximum extent feasible. Additionally, a Joint-Service group has been established by the Operational Test Agencies to conduct an Operational Assessment of the BMDS to characterize its operational effectiveness and suitability during development.

We must also ensure we deliver a system that is capable of performing concurrent defensive operations and testing. We will deliver and USSTRATCOM is planning for, a capability that operates in various readiness conditions. The specifics of these readiness conditions are still being defined, but the concept is straightforward. During a normal, day-to-day readiness condition, we will have the capacity for testing and minimal defensive operations, while during a heightened readiness condition we focus on defensive operations. At heightened readiness, the system is more capable because all available resources are on alert.

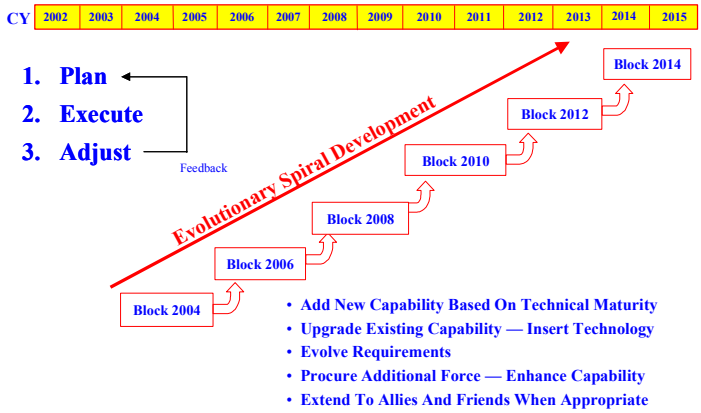
Our budget includes funding for logistics development for the BMDS in FY 05. Known as Contractor Logistics Support, this includes logistics funding for placing the system on alert; performing concurrent testing and operation of the system; and non-recurring maintenance of the operational system. The Services have responsibility in FY 05 for all recurring operations and support activity that is typical of base operations. After FY 05, for any system on alert status, the Secretary of Defense has directed the Services and MDA to develop a plan for funding operations and support, and to assume responsibility for the necessary funding in their respective budgets. MDA will continue to fund testing activity that occurs at operational sites.

The President made clear that there is no final, fixed missile defense architecture, but rather a set of capabilities to be fielded and improved over time. With this budget submission, we are beginning to plan for enhancements to the initial capability. Our FY 05 program includes, for example, funding for additional GBIs, funding for expansion of the Ft. Greely, Alaska site, and funding to begin upgrading the Early Warning Radar in Thule, Greenland. We have also included funding in our Future Years Defense Plan for additional Aegis BMD capability, THAAD capability and additional radar capability. We are also examining the possibility of placing some BMDS assets overseas, to provide enhanced protection for the U.S. homeland as well as for our allies and friends.

IV. BMD PROGRAM STRUCTURE

Our organizing principle remains the Block structure. Figure 1 illustrates the evolutionary nature of the Block concept; it is identical to the one we presented in last year's submission.

Figure 1: BMD Evolutionary Development



V. BMD PROGRAM PLANS AND GOALS

We continue to use an iterative and evolutionary system engineering and integration process to define goals for successive Blocks of the BMDS. The MDNT, a collaborative group of participants from government, FFRDCs, UARCs and industry, implements this process and focuses on the design, engineering, integration, risk management and configuration control of the BMDS. The detailed definition of a BMDS Block begins with high-level assessments based on key inputs and documentation from the developer, the users and threat communities. The MDNT establishes a wide-range of possible threat scenarios to conduct risk analyses and to define system capability or performance gaps. These gaps present opportunities for subsequent investment and development to evolve the capability from previous Block(s). The MDNT presents alternatives and analyses through a series of senior technical reviews (Alternative Review Board, Engineering Review Board, System Definition and Configuration Control Board) to update objectives.

Transfer Plans for BMDS Elements (In Accordance With Section 223)

We are working closely with the Services and the Combatant Commanders to ensure the system that is fielded can be sustained and supported when it is transferred. Consistent with the President's guidance, we are fielding systems that, at this point, require continued development and developmental testing. The latter is why the concept of concurrent testing and operations is an integral part of our success. Under these conditions, it would not be prudent for us to transfer management of any particular element to a Service. However, as mentioned previously, we have taken a first step in this process by agreeing with the Services on a plan to fund logistics to place the system on alert, to fund the maintenance required to conduct concurrent testing and operation of the system; and to fund nonrecurring costs associated with the development of the operational system. The Services, in turn, have responsibility for all recurring operations and support activity that is typical of base operations, and will assume responsibility for all activity related to the operation of alert capability in their respective budgets. We believe this plan will prepare all parties involved for the eventual transfer of management responsibility to the Services.

Given our current schedule, we anticipate that we may be ready to transfer those elements being placed on alert in Block 2004 sometime during the Block 2008. This date is subject to significant change depending on the continued progress we make in development, on operational testing while the system is on alert, and on assessments by the COCOMs. Because of the nature of capabilities-based development, and the need to place elements on alert status before we have completed the traditional development cycle, it is too early to estimate transfer dates for elements that are planned for alert after Block 2004. We have committed, however, to continued work with the Services to ensure a mutually agreeable transfer process is achieved.

Block 2004

This Block program of work is focused on those capabilities directed by the President for operational use in 2004-05. During Block 2004, we plan to place on alert 20 ground-based interceptors at Fort Greely, Alaska and Vandenberg Air Force Base (AFB), California; an upgraded Cobra Dane radar on Shemya Island in Alaska; and upgraded early warning radars at Fylingdales in the United Kingdom and at Beale AFB in California. We are also planning to place on alert by the end of 2005 three Aegis cruisers with a full Block 2004 Aegis BMD-capable weapon system and up to 10 SM-3 missiles loaded aboard to permit sustained operations at sea. Additionally, 10 Aegis warships will be modified with improved SPY-1 radar for long range surveillance and track capability and an additional five Aegis destroyers will be equipped in 2006. This initial capability would be added to point defense capabilities provided by the PATRIOT PAC-3 system currently being fielded by the U.S. Army.

We have reduced the procurement quantity of Block 2004 SM-3 missiles in FY 05 to reduce the concurrency of completing the SM-3 Block IA missile design while transitioning to rate procurement processes and facilities. We also reallocated funding to ensure the Aegis Weapon System would be ready to support BMDS engagements of ICBMs in September 2004 as part of IDO.

We have also made adjustments to the ABL program. In light of program and schedule uncertainty, we are removing schedule concurrency, and focusing on incremental technical progress towards successful demonstration of key milestones, or knowledge points, with appropriate risk mitigation. Because of this, we no longer plan for ABL to deliver a contingency capability in the Block 2004 timeframe.

The extended development of the first ABL weapon system will be accomplished via incremental steps through the following key knowledge points:

- Completion of ground testing of a flight worthy, six module, weapon class laser segment suitable for use in an ABL
- Completion of ground testing of a flight worthy beam control fire control segment
- Completion of flight testing of the Beam Control / Fire Control (BCFC) segment
- Completion of integration and ground testing of ABL weapon system combining the laser, BCFC, and battle management segments
- Demonstration of the ABL lethality against a boosting ballistic missile
- Completion of flight testing of an expanded ABL weapon system performance envelope

The ABL Block 2004 effort capitalizes on the technical progress achieved to date in integration and test of the first ABL weapon system test bed. The primary focus is accomplishing key near-term knowledge points while maintaining the overall objective of achieving a lethal demonstration at the earliest possible date. To that end, efforts necessary to reducing the risk and uncertainties associated with follow-on steps to shoot down also continue. The Block 2004 program additionally provides continued ABL specific technology maturation, integration and testing for future blocks and provides continued infrastructure advancement to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. Studies and a System Requirements Review to define the enhanced second ABL aircraft will be performed to guide infrastructure and technology improvement efforts, as well as the evaluation of the first ABL aircraft. These activities further reduce risk and uncertainties in achieving shoot down by refining the definition of the current aircraft baseline, applying lessons learned from the ongoing testing, implementing prudent system engineering practices, improving critical component reliability, and improving sparing. Details of the funding for Block 2004 are provided in the table below.

Block 2004 Funding FY 02-09 ($M Then-Year)*

Project	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FYDP FY 04-09	TOTALS FY02-FY09
C2BMC Block 2004	21	71	117	154	0	0	0	0	**271**	**363**
Hercules Block 2004	0	0	18	0	0	0	0	0	**18**	**18**
Joint Warfighter Support Block 2004	0	0	24	13	0	0	0	0	**37**	**37**
Test & Evaluation Block 2004	47	46	37	39	0	0	0	0	**76**	**169**
Targets & CM Block 2004	75	95	224	233	0	0	0	0	**457**	**627**
THAAD Block 2004	808	804	687	593	154	0	0	0	**1434**	**3046**
GMD Block 2004	636	397	1343	861	0	0	0	0	**2204**	**3237**
Aegis BMD Block 2004	413	433	641	966	178	0	0	0	**1784**	**2630**
ABL Block 2004	454	551	603	474	0	0	0	0	**1077**	**2082**
Totals	**2454**	**2397**	**3693**	**3333**	**332**	**0**	**0**	**0**	**7357**	**12208**

*Numbers may not add exactly due to rounding.

Block 2006

The primary thrust of the Block 2006 program of work is continued fielding to improve existing capabilities and further integration to improve overall system performance. Much of the activity needed to prepare for continued fielding begins in FY 05. By fielding additional weapons, sensors, and C2BM tools, we will provide greater protection for the U.S. homeland, as well as deployed forces, allies and friends. We will maintain the straightforward method for improving defenses in Block 2006:

- Add new radars that can be deployed overseas, close to the threat; add a moveable, sea-based midcourse radar to begin layering of radar sensors;
- Add GBIs at the Ft. Greely, Alaska site, or potentially at a new site;
- Add sea-based capability in the form of more SM-3 missiles and additional engagement capable Aegis ships;
- Add THAAD interceptors for endoatmospheric and exoatmospheric layering against all ranges of threats as they transition from the midcourse to the terminal phase;
- Add STSS Block 2006 sensor platforms to begin integration and fusion of radar and Overhead Nonimaging Infrared (ONIR) sensor data; and

- Network these capabilities by focusing on a C2BMC "backbone" to include an upgraded BMDS Battle Manager and Command and Control (C2) Planning capabilities that provide real-time sensor-netting to the warfighter for improved interoperability and decision-making capability. Additional BMDS C2BMC Suites and remote capability will be deployed to relevant COCOMs and other sites as the BMDS matures.

Throughout this Block, we will also continue our demonstration and validation effort, which will focus on integrated flight tests with added realism and more stressing threat countermeasures.

Additionally, beginning in Block 2006, we will take steps to ensure the infrastructure is in place to support further fielding decisions, as well as the necessary tests to maintain confidence in the operational system. In this regard, for instance, our Ground Based Midcourse Defense (GMD) program has been structured to produce interceptors at a minimal rate to support the development program and to make certain we can support future decisions on additional operational capability. It will also support continued development to allow evolutionary system improvements, and an extensive test program. Prior to these actions, the GMD element focused on sustaining a level of engineering that would allow minimal capability improvements over time.

The ABL Block 2006 program will continue to perform ground and flight tests of the first ABL weapon system. Our test objectives will be to expand the envelope of system performance by systematically stepping through knowledge points, and continuing ABL-specific technology maturation for integration and testing on subsequent blocks. We will also focus on the advancement of ABL infrastructure to maintain and improve domestic capability to produce advanced optics for high-energy laser systems. The Block 2006 effort also provides for enhancement of BMDS integration and ground support. Finally, it will continue studies on, and maintain the requirements baseline for, an optimal second ABL aircraft in order to further guide other efforts and reduce risk and uncertainty.

Details of the funding for Block 2006 are provided in the table below.

Block 2006 Funding FY 02-09 ($M Then-Year)*

Project	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FYDP FY 04-09	TOTALS FY02-FY09
C2BMC Block 2006	4	27	27	58	186	200	0	0	**471**	**502**
Hercules Block 2006	0	0	19	38	38	37	0	0	**132**	**132**
Joint Warfighter Support Block 2006	0	0	0	12	26	13	0	0	**51**	**51**
Test & Evaluation Block 2006	1	1	2	69	40	39	0	0	**151**	**152**
Targets & CM Block 2006	1	4	0	51	201	176	0	0	**428**	**432**
THAAD Block 2006	0	24	29	239	535	791	91	0	**1685**	**1709**
GMD Block 2006	2460	2063	1607	2351	2131	2113	0	0	**8203**	**12726**
Aegis BMD Block 2006	0	0	24	106	675	776	50	0	**1631**	**1631**
ABL Block 2006	0	0	0	0	533	587	0	0	**1120**	**1120**
BMDS Radars Block 2006	0	32	100	256	260	487	0	0	**1104**	**1135**
STSS Block 2006	55	207	267	274	260	183	47	52	**1082**	**1343**
Totals	**2520**	**2356**	**2075**	**3455**	**4884**	**5403**	**189**	**52**	**16058**	**20934**

*Numbers may not add exactly due to rounding.

Significant FY 05 Activity Contributing to Block 2006

	FY 05
GMD Block 2006	• Initiates acquisition of up to ten (10) additional EKVs, boosters and common silos for Fort Greely • Initiates acquisition of up to ten (10) EKVs and boosters for a third site • Initiates acquisition of long lead UEWR hardware items • Initiates planning/design/environmental process for UEWR HW/SW installation • Initiates construction of 10 additional common silos and supporting facilities at Fort Greely • Initiates and completes site facility designs for Thule UEWR • Initiates site/facility designs for a future additional fielding site
AEGIS BMD Block 2006	• Complete fabrication and start incremental testing of prototype AN/SPY-1 Aegis BMD Signal Processor • Commence at-sea testing of prototype AN/SPY-1 BSP. • Demonstrate real time feature extraction capability using the Aegis BMD signal processor prototype • Continue IR discrimination risk reduction and algorithm development • Continue to support performance capability assessment engineering • Initiate development of Block 2006 Aegis Weapon System computer program upgrade Aegis BMD 3.2 • Continue development of Aegis BMD communication architecture ensuring interface and interoperability is coordinated with C2BMC, BMC, GMD, Patriot, ABL, THAAD, KEI • Provide an option for an alternate DACS that will increase divert capability
Sensors Block 2006	• Delivery of Forward Deployable Radar hardware for field-testing • Delivery of engineering software release 1 • Continue Forward Deployable Radar integration and tests efforts • Update sensor architecture and roadmap • Deliver validated algorithms for Forward Deployable Radar • Continue TPS-X advanced algorithms in software release 1 • Executes Forward Deployable Radar C2BMC and platform integration efforts • Initiate development of BMDS sensor enhancements to support BMDS spiral upgrades • Execute contract option for 2nd Forward Deployable Radar • Continue Assembly Integration and Test of 2 STSS Block 2006 satellites • Continue STSS Ground Segment and Software Development
THAAD Block 2006	• Buy 1 Full-up missile, 1 Ground Test Unit, 1 Radar, 2 Engineering development units, 1 additional Missile round pallet • Conduct System Integration Laboratory (SIL) Hardware-in-the-Loop integration activities of hardware and software in preparation for Block 2006 testing • Initiate fabrication, assembly, and test of Missile hardware in preparation for Block 2006 flight testing and missile rounds required for Missile Block Qualification Testing (BQT) and insensitive munitions testing • Begin fabrication, assembly, and test of radar hardware for radar #2 • Complete fabrication, assembly, and test of launcher for Block 2006 flight testing and Block Qualification testing (BQT) • Initiate upgrade to Launcher software

Block 2008

The Block 2008 program of work represents a major step in the BMDS evolution. In this BMDS configuration, we plan to introduce contingency boost capability, at which time we will have the capability to engage the full spectrum of ballistic missile threats in all layers. This configuration will include Command and Control Battle Management (C2BM) components that enable truly integrated control of all system assets throughout the battle space. Our primary development projects for Block 2008 are:

- Improving the BMDS performance by adding Boost phase weapons, to include the Airborne Laser to the test bed;
- Improving the performance of all weapons by integrating Space-Based Infrared System (SBIRS) and STSS Block 2006 satellites and fusing multi-sensor discrimination products; and

- Demonstrating (through flight testing) increased system effectiveness against evolving threat countermeasures.

The cost goal for achieving this capability is $7.9B in the FYDP, which is detailed in the table below.

Block 2008 Funding FY 02-09 ($M Then-Year)*

Project	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FYDP FY 04-09	TOTALS FY02-FY09
C2BMC Block 2008	0	0	0	11	34	40	243	246	**575**	575
Hercules Block 2008	0	0	19	46	45	45	84	85	**324**	324
Joint Warfighter Support Block 2008	0	0	0	0	0	13	31	33	**77**	77
Test & Evaluation Block 2008	0	0	1	73	145	121	85	86	**510**	510
Targets & CM Block 2008	0	0	0	18	52	29	204	218	**521**	521
THAAD Block 2008	0	0	0	2	204	232	389	324	**1150**	1150
GMD Block 2008	0	0	0	0	0	0	1236	1238	**2474**	2474
Aegis BMD Block 2008	0	0	0	0	20	145	534	435	**1133**	1133
ABL Block 2008	11	0	0	0	0	0	445	425	**870**	882
BMDS Radars Block 2008	0	0	0	0	0	101	102	22	**225**	225
STSS Block 2008	0	0	0	0	0	25	30	20	**74**	74
Totals	**11**	**0**	**20**	**149**	**500**	**751**	**3382**	**3132**	**7933**	**7945**

*Numbers may not add exactly due to rounding.

Block 2010

The primary project in Block 2010 is the development of the boost/ascent phase capability of the kinetic energy BMDS Interceptor. Fielding a mobile, land based, boost/ascent capability will compliment the ABL while enhancing the effectiveness of the BMDS. Mobility of the interceptor is an essential characteristic enhancing its military utility. The canisterized interceptor is being developed to be completely common to both land and sea basing and compatible with land and sea environments increasing the flexibility of the interceptor system.

In this Block, we also will implement the C2BM and communications improvements to assimilate and exchange sensor data with all BMD System elements and users. Details of the funding for Block 2010 are provided in the table below.

Block 2010 Funding FY 02-09 ($M Then-Year)*

Project	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FYDP FY 04-09	TOTALS FY02-FY09
Aegis BMD Block 2010	0	0	0	0	0	8	30	94	**132**	132
STSS Block 2010	179	48	22	48	254	637	920	1113	**2994**	3221
Test & Evaluation Block 2010	0	0	0	0	0	62	139	142	**343**	343
BMDS Interceptor Block 2010	54	108	112	451	971	1275	1215	670	**4695**	4857
Totals	**233**	**156**	**134**	**499**	**1225**	**1982**	**2304**	**2020**	**8164**	**8553**

*Numbers may not add exactly due to rounding.

Significant FY 05 Activity Contributing to Block 2010

	FY 05
BMDS Interceptor (Block 2010)	Land Based *Element Level Activities* • Conduct integrated Ground Test 1 *Interceptor Level Activities* • Begin prototype of production line • Commence Interceptor and Canister production facility planning and implementation *C2BMC Level Activities* • Baseline interface requirements between KEI Boost/Ascent element and the BMDS C2BMC *Launcher Level Activities* • Commence launcher production facility planning and implementation Experimentation & Test • Complete Space Vehicle Environmental Test and Integration and Acceptance Testing • Certify Ground Segment Launch Site Readiness and Complete Ground Segment Mission Operations Center • Complete ground and Test of Flight Software • Complete delivery and acceptance of Launch Vehicle components • Accept delivery of two (2) multistage Boost Target components • Complete Kill Vehicle Software

Block 2012

Our Block 2012 program focuses on leveraging the Block 2010 mobile, land based boost/ascent capability to improve BMDS effectiveness in all phases of flight and all ranges of adversary capability. In Block 2012, we will complete the transition from land to sea, inaugurating this capability from a Navy vessel, likely a surface combatant or a submarine. We also begin testing the system's inherent midcourse capability during Block 2012, expanding the range and flexibility of the new BMDS interceptor. The Block 2012 strategy also includes the development of a space based interceptor test bed.

Block 2012 Funding FY 02-09 ($M Then-year)*

Project	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FYDP FY 04-09	TOTALS FY02-FY09
BMDS Interceptor Block 2012	0	0	0	47	131	422	947	1739	3286	3286
Totals	**0**	**0**	**0**	**47**	**131**	**422**	**947**	**1739**	**3286**	**3286**

*Numbers may not add exactly due to rounding.

Significant FY 05 Activity Contributing to Block 2012

	FY 05
BMDS Interceptor (Block 2012)	• Finalize International Cooperation Agreements • Award Alternate Boost/ascent Phase Component Contracts • Initiate Design of Alternate Components • Initiate sea-based launcher design and ship integration plan • Initiate hypergolic fuel risk mitigation project • Initiate technology development and testing of advanced, lightweight space-based interceptor components

Mission Area Investments

The remaining components of the WBS – which allow us to implement the BMDS across Blocks; expand capabilities in future Blocks; and develop capabilities not yet foreseen as part of a current or future Block – are collectively referred to as Mission Area Investments, and provide a common foundation for the entire integrated BMDS. These Mission Area Investments account for about $10.3 billion of the total funding request from FY 04-09. The table below provides a detailed breakdown of funding for each Investment Activity.

Mission Area Investments Funding FY 02-09 ($M Then-year)*

Project	FY02	FY03	FY04	FY05	FY06	FY07	FY08	FY09	FYDP FY 04-09	TOTALS FY02-FY09
System Engineering	236	371	395	469	481	516	527	550	**2938**	**3545**
C2BMC	16	159	108	72	74	77	79	88	**499**	**674**
Test & Targets	359	246	365	228	228	222	219	235	**1497**	**2102**
International Programs	211	174	226	160	104	79	79	79	**726**	**1111**
Advanced Concepts	347	317	371	456	425	474	512	523	**2760**	**3424**
Program Operations	232	295	260	300	317	329	339	358	**1903**	**2430**
Totals	**1400**	**1562**	**1726**	**1686**	**1629**	**1697**	**1754**	**1833**	**10324**	**13287**

*Numbers may not add exactly due to rounding.

Significant FY 05 Activity Contributing to Blocks 2006-2012

	FY 05
Targets & CMs (all future Blocks)	• Complete development of a Multi-mode Medium Range Target; Conduct Risk Reduction Flight • Complete development of Small Low Observable payload suite to support GMD flight tests • Complete Mid-Course Fly Along Sensor Package development • Begin development of the Enhanced Target Delivery System (heavier lift, greater range) • Begin development of Strategic Range Air Launch Target • Begin Long Range FMA acquisition / development • Continue development of advanced sensor units for integration into Fly Along Sensor Package (FASP) • Continue development of next generation FASP flight units • Integrate Strategic Target Systems booster and Generic Rest of World reentry vehicle to produce flight test articles for Integrated Flight Tests IFT-13c, IFT-14, IFT-15, and FT-04-1 (old IFT-16A)
Advanced Systems (Block 2008 and beyond)	• Conduct a hover test of the Miniature Kill Vehicle in FY05 • Laser Technology and LADAR programs will develop laser device, detector, and beam control components and a prototype midcourse LADAR seeker • Advanced Discrimination Initiative continues to develop sensor and weapon modifications to defeat countermeasures • Project Hercules continues to deliver algorithms to counter off-nominal and evolving threats • Continue as Executing Agent for High Altitude Airship (HAA) Advanced Concept Technology Demo and demo HAA in FY06 • Continue to develop and test early launch detection and tracking sensors and systems • Continue to develop and test technologies that enable future BMD capability enhancements including electro-optical and radio frequency components and systems
Test & Evaluation	• Acquire additional Airborne Sensor(s) System(s) • Acquire transportable range safety/telemetry collection systems • Execute dedicated flight tests CMCM-1 and CMCM-2 to support Block 2006/2008 system definition • Conduct Missile Defense Integration Exercises 4a and 4b to measure BMDS interoperability and initial integration • Conduct one BMDS Wargame per year to develop Concept of Operations (CONOPS) and Tactics, Techniques and Procedures • Conduct at least one Integrated Ground Test per year to provide BMD System readiness testing, measure integration and support system capability assessments • Provide data to support USSTRATCOM Military Utility Assessments
Systems Engineering	• Expand and update definition of the BMDS Technical Objectives and Goals (TOG) to reflect impacts of alternative future architecture studies that may require amendments to TOG definitions • Provide Block Data Package for each • Provide Block System Integration Strategy, Plan, and Planning Allocation Matrix • Provide Block Capability Verification and Assessment Plan and Report, test objectives, and target requirements

The following are several significant program objectives underpinning the budget request for the Mission Area Investments:

System Engineering Our core Systems Engineering function—which covers our Government, MDNT, SETA (Scientific, Engineering and Technical Assistance) and FFRDC personnel—defines, manages, and integrates all engineering development for the BMDS. These activities provide the technical expertise, tools, and facilities to develop the BMDS, as well as the intelligence and research capabilities that will guarantee the BMDS evolves in a way that is responsive to both known and anticipated threats. This major effort also includes the core focus-team in Countermeasures/Countercountermeasures (CM/CCM), BMD Modeling and Simulation projects, and a corporate lethality program.

The MDNT uses an iterative and evolutionary system engineering and integration process to define goals for successive Blocks of the BMDS. This process focuses on the definition, design, engineering, integration, risk management, configuration control, system analysis, and modeling and simulation of the BMDS. The detailed definition of a BMDS Block begins with high-level assessments based on key inputs and documentation from the developer, the users and threat communities. The MDNT establishes a wide-range of possible threat scenarios to conduct risk analyses and to define system capability or performance gaps. These gaps present opportunities for subsequent investment and development to evolve the capability from previous Block(s). The MDNT presents alternatives and analyses through a series of senior technical reviews (Alternative Review Board, Engineering Review Board, System Definition and Configuration Control Board) resulting in updated Statements of Goals. The MDNT translates approved Statements of Goals into detailed engineering requirements. System engineering (SE) is controlled with a rigorous configuration control process, a risk management process that emphasizes implementation risks, systems analysis that supports all SE functions, and modeling and simulation that controls the models used in SE. The MDNT, therefore, ensures that the capability delivered to the Combatant Commanders is a single, integrated, layered missile defense system.

Command, Control, Battle Management & Communications (C2BMC) Most funding for C2BMC activity has been moved to appropriate Blocks within our Work Breakdown Structure. The only funding remaining in the Mission Area Investments section of the WBS is government personnel, which is not conducive to a strict allocation to Blocks. The remainder of the funding in this WBS component is for the Hercules project, which develops the detection, tracking and discrimination algorithms to counter known and evolving missile threats.

Tests & Targets Provides resources to define, integrate, test, demonstrate and evolve a multi-layered BMDS, comprising two primary projects: Test & Evaluation (T&E) and Targets and Countermeasures. Both projects maintain divisions of Core and Block-specific efforts. Block-specific efforts for both projects are addressed in earlier portions of this Overview. Core functions provide for the implementation of test and target capabilities across multiple Blocks; expand the capabilities of the BMDS in future Blocks beyond the FYDP; maintain a core infrastructure that supports development and testing efforts, and, develop capability not yet foreseen as part of a current or future Block.

Specifically, the BMDS Measurements Program augments the BMD System Test Program by providing critical data and analysis to support block development. Under the Measurements

Program, all MDA measurement data requirements are collected, prioritized, validated, and then allocated to Tests of Opportunity (TOOs) or used to develop dedicated flight tests designated as Critical Measurements and Countermeasure (CMCM) flight tests.

The T&E Infrastructure program provides support to BMD System, element, and technology development programs by providing the full range of test resources necessary to support ground and flight-tests, enabling the development programs to determine system capability, reduce program risk, and satisfy test milestones/exit criteria. This support includes the development and sustainment of state-of-the-art ground test facilities, MDA required test range infrastructure, and common use transportable instrumentation. The support also includes development of target requirements and certification of targets, and ensures compliance with all relevant facility, siting, and environment requirements for all MDA programs.

The Targets and Countermeasures project provides core and mission support (base operations, rent, equipment, facility maintenance, etc.), travel, government civilian salaries, and technical and program management expertise critical to support each block development capability.

International Programs The President has emphasized the importance of working with other countries to develop missile defenses and defend against the ballistic missile threat. Our budget reflects this guidance. For example, this investment area sustains cooperative R&D programs with Israel by continuing support for the Arrow program; and with Japan and SM-3 improvements. Our efforts with Japan are leading towards two joint flight missions of the Aegis BMD system using an SM-3 modified with Japan-provided components in September 2005 and February 2006. We plan to upgrade the early warning radar at Fylingdales in the UK, and are investigating additional, R&D projects with the United Kingdom, and are engaging in initial discussions with several countries regarding cooperative efforts and potential contributions that each could make to the US BMDS and protection of Allied territory. One example of such a study is the NATO Feasibility Study for Missile Defense of Territory and Population; this complements NATO's steps to push BMD protection for its deployed forces. In addition, in order to facilitate international participation, internal planning is underway to investigate and prepare for future cooperation. A second example is our analysis of ways to provide improved BMD capabilities with Japan that would benefit both Japan and the U.S. Our international work is a priority, consistent with our vision, and supports the achievement of our goals.

International cooperation in the KEI program is an important part of the MDA's overall strategy on international cooperation and is in accordance with the President's direction. As mentioned earlier, our objective is to encourage substantial participation by friends and allies in the development of alternate interceptor, C2BMC, and launcher capabilities, thereby reducing risk, adding options for component evolution, and most importantly, fostering collaboration with our friends and allies, leading to collaborative overseas production capability. In Fiscal Year 2005 we intend to award contracts for international industry development projects that produce viable alternate components for potential insertion during Block 2012 and succeeding Blocks.

Advanced Systems In support of the President's decision to field a BMD System, Advanced Systems is intensifying its efforts to increase BMD system effectiveness in the midcourse phase. The Miniature Kill Vehicle (MKV) program will increase midcourse firepower by placing

multiple interceptors on a single booster, thus relieving the strain on BMD sensors and discrimination assets to find a single target. Hover tests for MKV are planned in FY05. The Laser Technology and Laser Radar (LADAR) programs will develop state-of-the-art components for all BMD missions, and a compact, powerful LADAR for midcourse discrimination. The Advanced Discrimination Initiative will continue as a cross-Agency effort to modify BMD System weapons and sensors to defeat adversary countermeasures.

Advanced Systems is leading the Department of Defense's Advanced Concept Technology Demonstration to develop a High Altitude Airship to carry a wide range of surveillance, communications, and early warning sensors for the Boost and Midcourse tiers. The Airship will also support Homeland Defense and theater combat operations. It will complete Design Readiness Review in FY 05, en route to fabrication and a 30-day flight test demonstration in FY 06.

In the area of sensors, Advanced Systems will continue to develop and test early launch detection sensors to gain critical mission time for boost-phase interceptors; these sensors are ideal for the Airship. Under the Advance Discriminating Laser Radar Technology Program, Advanced Systems is developing small, high-power laser radar systems to support future Exoatmospheric Kill Vehicle (EKV) upgrades. High-power gallium arsenide amplifiers, transportable antenna arrays and coherent distributed aperture technologies are being pursued to support next generation radar concepts. Finally, Advanced Systems will continue to develop improved focal plane arrays, which are vital for improving interceptor and surveillance systems in all engagement phases.

Program-Wide Support Our Program-Wide Support expenses are primarily for government personnel performing management support activities, contractors that assist in performing these activities, and Operations & Maintenance-like (O&M) costs associated with facilities operations and maintenance, supplies and equipment, communications and printing, travel and training, and information technology management. The activities are performed at the MDA, the Army Space and Missile Defense Command, the Army Program Executive Office (PEO) for Air and Missile Defense, the Navy PEO for Integrated Warfare Systems, and Program Directorate (PD) 452, and several major Air Force Commands and Laboratories.

Program-Wide Support allows consolidation, integration and efficiencies of common support functions across the program. Typical support includes accounting and financial management services, budgetary and fiscal policy (e.g., guidance on budget submissions, budget execution, and related financial reporting), program integration, centralized cost estimating, earned-value management, the command's audit activity, contracting, information systems support, legal services, physical and program security (which has seen dramatic growth since 9/11), and mission assurance. Facilities maintenance includes all rents and utilities, supplies, equipment, safety, security (e.g., facility entry control, Closed Circuit Television, and alarm monitoring, badge issue), and service support for operational and maintenance activities. Program-Wide Support funds are allocated across multiple Program Elements in accordance with the Fiscal Year 1996 Authorization Act, which directed these funds be allocated to the programs being supported rather than managed from a single source.

VI. BMD MANAGEMENT

The DoD Senior Executive Council (SEC), chaired by the Deputy Secretary of Defense, is the primary authority for making recommendations to the Secretary of Defense on significant research and development changes and on fielding BMDS capability. The SEC also includes the Under Secretary of Defense for Acquisition, Technology and Logistics, and the Service Secretaries. The Deputy Secretary may invite others as necessary. The Director of the Missile Defense Agency makes recommendations directly to the SEC. Additionally, we have briefed and continue to consult the Joint Requirements Oversight Council (JROC).

The SEC relies on the Missile Defense Support Group (MDSG), which meets frequently over the course of the year, to aid in its decision process. The MDSG includes principals from the Office of the Under Secretary of Defense for Acquisition, Technology & Logistics, the Office of the Under Secretary of Defense for Policy, the Office of the Under Secretary of Defense/Comptroller, the Joint Staff, the Office of the Assistant Secretary of Defense for Networks and Information Integration, the General Counsel, the Office of the Director for Operational Testing & Evaluation, the Office of the Director of Program Analysis & Evaluation, the Cost Analysis Improvement Group, and the Services. MDSG members have insight into every aspect of the BMD Program and are the primary means for conducting and coordinating all department-level analyses or reports on missile defense. Staff-level analysts comprising the MDSG Working Group receive periodic management reports and frequently attend our internal program progress reviews.

We work with the Services to ensure that Service perspectives and concerns are reflected in the development of BMDS capabilities. Senior deliberative bodies known as the Service-MDA Board of Directors coordinate and resolve BMD issues in scheduled forums. We discuss program policy and direction, resources, requirements, development progress, transition issues, and operations and support concerns. In addition, the Services have liaison teams that reside in MDA, but report to their Service. A General Officer Steering Committee also provides feedback to MDA on Service and COCOM concerns.

This Administration, under the auspices of the Office of Management and Budget (OMB), has continued evaluating our management systems and practices. Applying OMB's Program Assessment Rating Tool (PART), we received high marks for designing and implementing a focused program based on sound strategic planning activities, establishing measurable planning and success criteria for the program of work, and capturing and assessing broad-based program results to guide resource allocation decisions.

The table below provides a crosswalk of our budget request by both Program Element and WBS, with detailed funding identified for the FYDP.

Mapping PEs Across BMDS Blocks FYDP 04-09 ($M)*

PE Title	PE Number	Block	FY04	FY05	FY06	FY07	FY08	FY09	Total
Technology	**0603175C**	Mission Area Investments	225	204	199	246	286	305	1467
		Total	**225**	**204**	**199**	**246**	**286**	**305**	**1467**
ACES	**0603879C**	Mission Area Investments	150	256	230	232	232	225	1324
		Total	**150**	**256**	**230**	**232**	**232**	**225**	**1324**
Terminal	**0603881C**	Block 2004	687	593	154	0	0	0	1434
		Block 2006	29	239	535	791	91	0	1685
		Block 2008	0	2	204	232	389	324	1150
		Block 2010	0	0	0	0	0	0	0
		Mission Area Investments	158	104	100	95	90	87	634
		Total	**875**	**938**	**993**	**1118**	**570**	**410**	**4903**
Midcourse	**0603882C**	Block 2004	1984	1827	178	0	0	0	3988
		Block 2006	1631	2458	2806	2890	50	0	9834
		Block 2008	0	0	20	145	1770	1672	3607
		Block 2010	0	0	0	8	30	94	132
		Mission Area Investments	130	120	64	45	31	36	425
		Total	**3744**	**4404**	**3068**	**3087**	**1881**	**1802**	**17987**
Boost	**0603883C**	Block 2004	603	474	0	0	0	0	1077
		Block 2006	0	0	533	587	0	0	1120
		Block 2008	0	0	0	0	445	425	870
		Mission Area Investments	14	18	23	25	28	31	140
		Total	**617**	**493**	**556**	**612**	**474**	**456**	**3207**
Sensors	**0603884C**	Block 2004	0	0	0	0	0	0	0
		Block 2006	366	530	520	670	47	52	2186
		Block 2008	0	0	0	126	132	42	299
		Block 2010	22	48	254	637	920	1113	2994
		Mission Area Investments	37	14	17	21	23	26	138
		Total	**425**	**592**	**790**	**1454**	**1122**	**1233**	**5616**
BMDS Interceptor	**0603886C**	Block 2008	0	0	0	0	0	0	0
		Block 2010	112	451	971	1275	1215	670	4695
		Block 2012	0	47	131	422	947	1739	3286
		Mission Area Investments	6	12	16	21	35	40	130
		Total	**118**	**511**	**1119**	**1717**	**2197**	**2449**	**8111**
BMD Test & Targets	**0603888C**	Block 2004	261	272	0	0	0	0	533
		Block 2006	2	120	242	215	0	0	579
		Block 2008	1	90	197	150	289	304	1031
		Block 2010	0	0	0	62	139	142	343
		Mission Area Investments	372	234	235	229	226	242	1538
		Total	**636**	**716**	**673**	**656**	**654**	**688**	**4024**
BMD Products	**0603889C**	Block 2004	158	167	0	0	0	0	325
		Block 2006	46	108	250	251	0	0	654
		Block 2008	19	57	79	99	357	364	975
		Mission Area Investments	82	87	93	96	99	105	562
		Total	**305**	**419**	**421**	**446**	**456**	**470**	**2517**
BMD Core	**0603890C**	Mission Area Investments	445	480	493	528	539	568	3053
		Total	**445**	**480**	**493**	**528**	**539**	**568**	**3053**
Mgmt Hq/PRMRF	**0901585C/ 0901598C**	Mission Area Investments	107	156	159	158	165	168	81
		Total	**14**	**14**	**13**	**13**	**13**	**13**	**81**
	MDA Total		**7647**	**9169**	**8701**	**10254**	**8576**	**8775**	**53122**

*Numbers may not add exactly due to rounding.

VII. SUMMARY

Our FY 2005 budget submission supports an initial capability, provides for additional capability over time, and maintains an aggressive Research, Development, Test & Evaluation (RDT&E) program to accomplish our goal of defending the United States, and our allies, friends, and deployed forces from ballistic missiles of all ranges in all phases of flight. It also allows us to continue the significant progress and success we have achieved since last year's budget.

ACRONYM LIST

ABL	Airborne Laser
ACD	Adversary Capabilities Document
AFB	Air Force Base
AOR	Area of Responsibility
BMDS	Ballistic Missile Defense System
C2	Command and Control
C2BM	Command and Control Battle Management
C2BMC	Command and Control Battle Management and Communication
CM	Countermeasures
CM/CCM	Countermeasures / Counter-Countermeasures
CMCM	Critical Measures and Countermeasures
COCOMS	Combat Commanders
CONOPS	Concept of Operations
CTF	Combined Test Force
CVAP	Capability Verification Assessment Plan
CVAR	Capability Verification Assessment Report
DoD	Department of Defense
DSP	Defense Support Program
ECS	Element Capability Specifications
EKV	Exoatmospheric Kill Vehicle
ESG	Engagement Sequence Groups
FASP	Fly Along Sensor Package
FDR	Forward Deployable Radar
FFRDC	Federally Funded Research and Development Centers
FM	Flight Mission
FMA	Foreign Military Assistance
FY	Fiscal Year
FYDP	Future Years Defense Program
GBI	Ground Based Interceptor
GMD	Ground-Based Midcourse Defense
HAA	High Altitude Airship
HEL	High Energy Laser
ICS	Interface Control Specifications
IDC	Initial Defense Capability
IDO	Initial Defense Operations
IFT	Integrated Flight Test
IPP	Impact Point Prediction
IRBM	Intermediate Range Ballistic Missile
JROC	Joint Requirements Oversight Council
KEI	Kinetic Energy Interceptor
KW	Kinetic Warhead
LADAR	Laser Radar

LPP	Launch Point Prediction
LRBM	Long-Range Ballistic Missile
MDA	Missile Defense Agency
MDIE	Missile Defense Integration Exercises
MDNT	Missile Defense National Team
MDSG	Missile Defense Support Group
MKV	Miniature Kill Vehicle
MRBM	Medium-Range Ballistic Missile
NATO	North Atlantic Treaty Organization
NFIRE	Near-Field Infrared Experiment
O&M	Operations and Maintenance
OMB	Office of Management and Budget
PAC	PATRIOT Advanced Capability
PAM	Planning and Allocation Matrix
PART	Program Assessment Rating Tool
PD	Program Directorate
PE	Program Element
PEO	Program Executive Office
R&D	Research & Development
RDT&E	Research, Development, Test and Evaluation
RTO	Responsible Test Organization
SBIRS	Space-Based Infrared System
SBX	Sea-Based X-Band Radar
SCS	System Capability Specification
SE	System Engineering
SEC	Senior Executive Council
SETA	Scientific, Engineering and Technical Assistance
SM	Standard Missile
SOG	Statement of Goals
SRBM	Short-Range ballistic Missile
STSS	Space Tracking & Surveillance System
T&E	Test and Evaluation
THAAD	Theater High Altitude Area Defense
TOG	Technical Objectives and Goals
TOO	Test of Opportunity
UARC	University Affiliated Research Centers
UCP	Unified Command Plan
UEWR	Upgraded Early Warning Radar
USNORTHCOM	United States Northern Command
USSTRATCOM	United State Strategic Command
WBS	Work Breakdown Structure